PROCEEDINGS

OF

THE ROYAL SOCIETY.

1841. No. 48.

May 13, 1841.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

Robert Liston, Esq., and Henry Harpur Spry, Esq., were balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "Meteorological Observations for August, September, and October, 1840, taken on board H.M.S. *Erebus* and *Terror*, by and under the direction of Capt. James Clark Ross, R.N., Commander of the Antarctic Expedition." Presented by the Lords Commissioners of the Admiralty, and communicated by the President of the Royal Society.

2. "Hourly Meteorological Observations made at Plymouth, in latitude 52° 36′ 12″, longitude in time 6^m 55^s east, on the 22nd of March, 1841." By Arthur Utting, Esq. Communicated by Capt. Edward Johnson, R.N., F.R.S.

3. "Barometrical Observations taken at Naples at 9 A.M. on each day during the months of January and February, 1841." By Sir Woodbine Parish, K.C.H., F.R.S. Presented by direction of the Council of the Royal Geographical Society, and communicated by S. H. Christie, Esq., Sec. R.S.

4. "Memoir of the case of a gentleman born blind, and successfully operated upon in the eighteenth year of his age; with Physiological Observations and Experiments." By J. C. August Franz, M.D., M.R.C.S. Communicated by Sir Benjamin C. Brodie, Bart., F.R.S.

The young gentleman who is the subject of this memoir had been affected from birth with strabismus of both eyes; the right eye was amaurotic, and the left deprived of sight by the opacity both of the crystalline lens and of its capsule. At the age of seventeen, an operation for the removal of the cataract of the left eye was performed by the author with complete success. On opening the eye for the first time, on the third day after the operation, the patient described

his visual perception as being that of an extensive field of light, in which everything appeared dull, confused, and in motion, and in which no object was distinguishable. On repeating the experiment two days afterwards, he described what he saw as a number of opake watery spheres, which moved with the movements of the eye, but when the eye was at rest remained stationary, and their margins partially covering one another. Two days after this the same phenomena were observed, but the spheres were less opake and somewhat transparent; their movements were more steady, and they appeared to cover each other more than before. He was now for the first time capable, as he said, of looking through these spheres, and of perceiving a difference, but merely a difference, in the surrounding objects. The appearance of spheres diminished daily; they became smaller, clearer, and more pellucid, allowed objects to be seen more distinctly, and disappeared entirely after two weeks. As soon as the sensibility of the retina had so far diminished as to allow the patient to view objects deliberately without pain, ribands differently coloured were presented to his eye. These different colours he could recognize, with the exception of yellow and green, which he frequently confounded when apart, but could distinguish when both were before him at the same time. Of all colours, gray produced the most grateful sensation: red, orange and yellow, though they excited pain, were not in themselves disagreeable; while the effect of violet and of brown was exactly the reverse, being very disagreeable, though not painful. Brown he called an ugly colour: black produced subjective colours; and white gave rise to a profusion of *muscæ volitantes*. When geometrical figures of different kinds were offered to his view, he succeeded in pointing them out correctly, although he never moved his hand directly and decidedly, but always as if feeling with the greatest caution. When a cube and a sphere were presented to him, after examining these bodies with great attention, he said that he saw a quadrangular and a circular figure, and after further consideration described the one as being a square, and the other a disc, but confessed that he had not been able to form these ideas until he perceived a sensation of what he saw in the points of his fingers, as if he really touched the objects. Subsequent experiments showed that he could not discriminate a solid body from a plane surface of similar shape; thus a pyramid placed before him, with one of its sides towards his eye, appeared as a plane triangle.

Two months after the above-mentioned operation, another was performed on both eyes, for the cure of the congenital strabismus, by the division of the tendons of the recti interni muscles, which produced a very beneficial effect on the vision of the left eye; and even the right eye, which had been amaurotic, gained some power of perceiving light, and, from being atrophied, became more prominent. Still it was only by slow degrees that the power of recognizing the true forms, magnitudes, and situations of external objects was acquired. In course of time, the eye gained greater power of converging the rays of light, as was shown by the continually increasing capacity of distinct vision by the aid of spectacles of given powers.